WHAT IS CLAIMED IS:

1. A game machine, comprising:

a traveling field, on which platen dots are provided; and

a plurality of self-propelled members, which are provided on the traveling field, each including:

a first yoke, which constitutes a first linear motor together with the platen dots for propelling the self-propelled member in a first direction on the traveling field;

a second yoke, which constitutes a second linear motor together with the platen dots for propelling the self-propelled member in a second direction which is perpendicular to the first direction;

a motor;

a miniature member, which is coupled with the motor so as to be rotatably supported on the self-propelled member; and

a controller, which controls the motor such that a rotated angle of the miniature member is determined in accordance with a propelling direction of the self-propelled member.

2. The game machine as set forth in claim 1, wherein ball bearings are provided on a bottom face of the self-propelled member to assist the propelling on the traveling field.

3. The game machine as set forth in claim 1, wherein each of the first yoke and the second yoke is formed with three legs provided with coils, to

constitute three-phase linear motor.

4. The game machine as set forth in claim 3, wherein a lower end portion of each leg is split into plural projections each having an identical width with a width of each platen dot.

5. The game machine as set forth in claim 2, wherein the ball bearings are composed of at least three independent ball bearings.

6. The game machine as set forth in claim 2, wherein the ball bearings are supported within an annular retainer formed on the bottom face of the self-propelled member to constitute a thrust bearing.

7. The game machine as set forth in claim 1, wherein the motor is a pulse motor.

8. The game machine as set forth in claim 1, wherein nozzles from which air is blown toward a bottom face of the self-propelled member are formed on the traveling field to form an air bearing layer between the bottom face and the traveling field to support the self-propelled member thereon.

9. The game machine as set forth in claim 8, wherein a skirt member is formed on a peripheral portion of the bottom face of the self-propelled member.

10. The game machine as set forth in claim 1, wherein the self-propelled member includes a compressor for blowing compressed air toward the traveling field through nozzles formed on a bottom face thereof, to form an air bearing layer between the bottom face and the traveling field to support the self-propelled member thereon.

11. A self-propelled member which propels on a traveling field provided with platen dots thereon, comprising:

a first yoke, which constitutes a first linear motor together with the platen dots for propelling the self-propelled member in a first direction on the traveling field;

a second yoke, which constitutes a second linear motor together with the platen dots for propelling the self-propelled member in a second direction which is perpendicular to the first direction;

a motor;

a miniature member, which is coupled with the motor so as to be rotatably supported on the self-propelled member; and

a controller, which controls the motor such that a rotated angle of the miniature member is determined in accordance with a propelling direction of the self-propelled member.

12. The self-propelled member as set forth in claim 11, wherein ball bearings are provided on a bottom face of the self-propelled member to assist the propelling on the traveling field.

13. The self-propelled member as set forth in claim 11, wherein each of the first yoke and the second yoke is formed with three legs provided with coils, to constitute three-phase linear motor.

14. The self-propelled member as set forth in claim 13, wherein a lower end portion of each leg is split into plural projections each having an identical width with a width of each platen dot.

15. The self-propelled member as set forth in claim 12, wherein the ball bearings are composed of at least three independent ball bearings.

16. The self-propelled member as set forth in claim 12, wherein the ball bearings are supported within an annular retainer formed on the bottom face of the self-propelled member to constitute a thrust bearing.

17. The self-propelled member as set forth in claim 11, wherein the motor is a pulse motor.

18. The self-propelled member as set forth in claim 11, wherein a skirt member is formed on a peripheral portion of a bottom face of the self-propelled member.

19. The self-propelled member as set forth in claim 11, wherein the self-propelled member includes a compressor for blowing compressed air toward the traveling field through nozzles formed on a bottom face thereof, to

form an air bearing layer between the bottom face and the traveling field to support the self-propelled member thereon.

20. A racing game machine, comprising:

a racing track;

a traveling field extending below the racing track, on which platen dots are provided;

a plurality of miniature members, which are provided on the racing track to be raced with each other, each miniature member provided with a magnetic substance; and

a plurality of self-propelled members, which are provided on the traveling field while being associated with the respective miniature members, each self-propelled member including:

a first yoke, which constitutes a first linear motor together with the platen dots for propelling the self-propelled member in a first direction on the traveling field;

a second yoke, which constitutes a second linear motor together with the platen dots for propelling the self-propelled member in a second direction which is perpendicular to the first direction;

a guide magnet, which constitutes a torque transmission coupling with the magnetic substance of the associated miniature member;

a motor, which rotates the guide magnet so as to turn a posture of the associated miniature member via a magnetic force; and

a controller, which controls the motor such that a rotated angle of the guide magnet is determined in accordance with a propelling

direction of the self-propelled member.

21. The game machine as set forth in claim 20, wherein ball bearings are provided on a bottom face of the self-propelled member to assist the propelling on the traveling field.

22. The game machine as set forth in claim 20, wherein each of the first yoke and the second yoke is formed with three legs provided with coils, to constitute three-phase linear motors.

23. The game machine as set forth in claim 22, wherein a lower end portion of each leg is split into plural projections each having an identical width with a width of each platen dot.

24. The game machine as set forth in claim 21, wherein the ball bearings are composed of at least three independent ball bearings.

25. The game machine as set forth in claim 21, wherein the ball bearings are supported within an annular retainer formed on the bottom face of the self-propelled member to constitute a thrust bearing.

26. The game machine as set forth in claim 20, wherein each of the guide magnet of the self-propelled member and the magnetic substance of the miniature member is composed of arcuate N-pole magnets and arcuate S-pole magnets which are arranged alternately and annularly.

27. The game machine as set forth in claim 20, wherein the motor is a pulse motor.

28. The game machine as set forth in claim 20, wherein nozzles from which air is brown toward a bottom face of the self-propelled member are formed on the traveling field to form an air bearing layer between the bottom face and the traveling field to support the self-propelled member thereon.

29. The game machine as set forth in claim 28, wherein a skirt member is formed on a peripheral portion of the bottom face of the self-propelled member.

30. The game machine as set forth in claim 20, wherein the self-propelled member includes a compressor for blowing compressed air toward the traveling field through nozzles formed on a bottom face thereof, to form an air bearing layer between the bottom face and the traveling field to support the self-propelled member thereon.

31. The game machine as set forth in claim 20, wherein the magnetic substance of the miniature member is divided magnetic poles forming an induced magnet.

32. The game machine as set forth in claim 21, wherein:

the ball bearings are made of metal, and

a conductive layer is formed on the traveling field for supplying

electric power to the linear motors of the self-propelled member via the ball bearings.

33. A self-propelled member which propels on a traveling field provided with platen dots thereon, comprising:

a miniature member, which is provided with a magnetic substance;

a first yoke, which constitutes a first linear motor together with the platen dots for propelling the self-propelled member in a first direction on the traveling field;

a second yoke, which constitutes a second linear motor together with the platen dots for propelling the self-propelled member in a second direction which is perpendicular to the first direction;

a guide magnet, which constitutes a torque transmission coupling with the magnetic substance of the miniature member;

a motor, which rotates the guide magnet so as to turn a posture of the miniature member via a magnetic force; and

a controller, which controls the motor such that a rotated angle of the guide magnet is determined in accordance with a propelling direction of the self-propelled member.

34. The self-propelled member as set forth in claim 33, wherein ball bearings are provided on a bottom face of the self-propelled member to assist the propelling on the traveling field.

35. The self-propelled member as set forth in claim 33, wherein each of the first yoke and the second yoke is formed with three legs provided with coils, to constitute three-phase linear motors.

36. The self-propelled member as set forth in claim 35, wherein a lower end portion of each leg is split into plural projections each having an identical width with a width of each platen dot.

37. The self-propelled member as set forth in claim 34, wherein the ball bearings are composed of at least three independent ball bearings.

38. The self-propelled member as set forth in claim 34, wherein the ball bearings are supported within an annular retainer formed on the bottom face of the self-propelled member to constitute a thrust bearing.

39. The self-propelled member as set forth in claim 33, wherein each of the guide magnet of the self-propelled member and the magnetic substance of the miniature member is composed of arcuate N-pole magnets and arcuate S-pole magnets which are arranged alternately and annularly.

40. The self-propelled member as set forth in claim 33, wherein the motor is a pulse motor.

41. The self-propelled member as set forth in claim 33, wherein a skirt member is formed on a peripheral portion of a bottom face of the self-propelled

member.

42. The self-propelled member as set forth in claim 33, wherein the self-propelled member includes a compressor for blowing compressed air toward the traveling field through nozzles formed on a bottom face thereof, to form an air bearing layer between the bottom face and the traveling field to support the self-propelled member thereon.

43. The game machine as set forth in claim 33, wherein the magnetic substance of the miniature member is divided magnetic poles forming an induced magnet.

44. The game machine as set forth in claim 34, wherein the ball bearings are made of metal, through which electric power is supplied to the linear motors.